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REMARKS

The Office action of September 29, 2008, has been carefully considered.

Claims 9-16 have been rejected under 35 USC 112, 2nd paragraph, as being indefinite for failing to recite the steps of the Bayer process. Although the Bayer process is well known, Applicants have amended claim 9 to recite the steps of the Bayer process as are disclosed in the specification at page 1, line 10- page 2, line 2. Amendments have also been made to claims 9 and 15 such that the Bayer process steps now recited provide antecedent basis for further process steps. Applicants submit that these amendments do not change the scope of the claims, and should be entered after final rejection.

Withdrawal of this rejection is requested.

Claims 9-16 have been rejected under 35 USC 102(b) as anticipated by or under 35 USC 103(a) as obvious over Lamerant.

The Office Action alleges that Lamerant teaches heating ground bauxite in an aqueous solution comprising sodium hydroxide at a temperature greater than 80°C.

While this is correct, it is not what is presently claimed.

According to claim 9, the invention requires the steps of 1) heating the aliquot of spent liquor, and 2) mixing the heated aliquot of spent liquor with ground bauxite to form a slurry. Importantly, the heating must be sufficient that after the mixing, the slurry must be at a temperature of greater than about 95°C.

The Office Action alleges that "the features upon which applicant relies (i.e. preheating an alkaline solution) are not recited in the rejected claim(s)." This is not understood, as the steps of heating and mixing to form a slurry (in that

order) are specifically recited.

Moreover, the passages of Lamerant referred to in the Office Action:

> (a) heating a suspension of ground bauxite in an aqueous solution comprising sodium hydroxide at a temperature greater than 80°C.; (col. 3, lines 56-67)

and

> Specifically, the present method involves pre-desilication of ground bauxite suspended in a solution, preferably a decomposed sodium aluminate liquor, wherein Rp is 0.5 to 0.7 and the sodium hydroxide concentration is 140 to 170 g Na_2O/liter, by heating at a temperature less than or equal to 108°C., preferably for at least 30 minutes, preferably at atmospheric pressure, while keeping the concentration of dry material in the suspension greater than 0.7 ton/m^3. The pre-desilication step should be conducted at a temperature greater than 80°C. (col. 4, lines 30-40)

do not disclose or suggest mixing ground bauxite with a pre-heated aliquot of spent liquor. These passages disclose only that the mixture of liquor and ground bauxite is heated to a temperature greater than 80°C.

In the figure of Lamerant, it can be seen that that the aliquot 14 is drawn off from the spent liquor 11 exiting the decomposition circuit. The temperature of the liquor at the decomposition step is maintained at less than 80°C, typically 50-70°C, in order to obtain the desired number and shape of the precipitates. Attached hereto are three references:

Exhibit A: Grjotheim and Welsh, Aluminium Smelter Technology, A Pure and Applied Approach, Aluminium Verlag, 1980, p. 21;

Exhibit B: Downs, Chemistry of Aluminium, Gallium, Indium and Thallium, Springer, 1993, p. 84; and

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Exhibit C: Polmear, Light Alloys: From Traditional Alloys to Nanocrystals, Butterworth-Heinemann, 2006, p. 16,

all of which state that decomposition is carried out at about 50°C.

Consequently, an aliquot of liquor exiting the decomposition stage at a temperature of about 50°C cannot be at a temperature sufficient the after mixing with ground bauxite, the slurry will be at a temperature of at least 95°C. As explained and demonstrated in the present application, this feature is important because, it surprisingly and significantly increases the filterability of the slurry resulting from the digestion.

Withdrawal of this rejection is requested.

Claims 9-16 have been rejected under 35 U.S.C. 102(b) as anticipated by or under 35 U.S.C. 103(a) as obvious Harato.

As explained previously, Harato discloses mixing alumina-containing and reactive silica-containing ore with an alkaline solution to obtain a slurry having solids greater than 20% by weight, optionally preheating the slurry to a temperature of 70-120°C, then supplying to a tube reactor an alkaline slurry mixture resulting from mixing the slurry with an aqueous alkaline solution that has been preheated to a temperature of about 120-160°C.

Reference is made to column 3, lines 59-62:

> In practicing the process of the present invention, bauxite as the raw material, as is or after being roughly ground, is formed into a slurry, and is charged into a preheating apparatus as is or after being wet ground as desired.

Thus, Harato does not disclose or suggest *preheating the alkaline solution* to a temperature such that the slurry when formed is at a temperature of at least about 95°C. The claimed invention is, to the contrary, directed to a

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preheating step for the alkaline solution prior to its first contact with the ground ore. The slurry according to Harato et al is heated only after it is formed, and it is only the slurry which is mixed with a solution which has been preheated.

Withdrawal of this rejection is accordingly requested.

Claims 9-16 have been rejected under 35 U.S.C. 102(b) as anticipated by, or under 35 U.S.C. 103(a) as obvious over McDaniel.

McDaniel discloses a double digestion process in which the bauxite is first reacted with spent caustic soda solution at 113-205°C to produce a first pregnant liquor stream, a granular residue stream and a muddy substance stream. The granular residue stream is discarded, while the muddy substance stream is reacted with or without a small portion of bauxite with a spent caustic soda stream at 206-350°C to produce a second pregnant liquor stream and a red mud stream which is discarded.

At column 4, lines 1-4, McDaniel states:

> Accordingly, a bauxite is ground with a spent caustic soda solution and pumped as a slurry into digesters and reacted at a temperature ranging from 113° C. to 205°C. with additional spent caustic soda solution, . . .

At column 4, lines 34-41, McDaniel states that:

> ...bauxite is ground to less than 0.2 inches but preferably to less than 0.1 inches with a spent caustic soda stream in vessel 1 to form a bauxite slurry. The bauxite slurry is pumped into reaction vessel 2 and reacted at 113°C. to 205°C. for 2-200 minutes with more spent caustic soda solution to form a stream of pregnant liquor granular residue and muddy substance.

Thus, McDaniel teaches forming a slurry from ground bauxite and caustic soda, *then* pumping the slurry into a reaction vessel and heating to a high temperature. McDaniel

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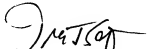
does not disclose or suggest *preheating the caustic soda solution to a high temperature* to obtain a slurry which is close to the boiling point upon formation.

Withdrawal of this rejection is accordingly requested.

In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,



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